



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,748	02/11/2002	Michael S. Hibbs	BUR920010135	5595

23550 7590 04/17/2003

HOFFMAN WARNICK & D'ALESSANDRO, LLC
3 E-COMM SQUARE
ALBANY, NY 12207

EXAMINER

NGUYEN, HUNG

ART UNIT PAPER NUMBER

2851

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/683,748

Applicant(s)

HIBBS, MICHAEL S.

Examiner

Hung Henry V Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 7 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 12 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Eynon (U.S.Pat. 6,524,754).

With respect to claim 12, Eynon (fig.3) discloses a pellicle mounting system for a mask (22) comprising all basic structures of the instant claim such as: an aerodynamic fairing/a flexible retainer (50,54,56) adjacent the mask, the fairing having a taper (56), which is adapted to reduce aerodynamic drag on the pellicle (28).

3. Claims 1 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyachi et al (U.S.Pat. 6,101,237).

With respect to claim 1, Miyachi discloses a mounting system for a pellicle comprising all of the limitations of the claim including: a mounting structure (4) for coupling a pellicle (6) to a mask (2), wherein a sealed interior portion is formed between the pellicle, the mask and the

Art Unit: 2851

mounting structure and a port (8) on the mounting structure through which a pressure difference can be created between the interior portion and an exterior environment.

As to claim 18, the method is seen to be an inherent teaching in existence of the discussed apparatus.

4. Claims 1-4, 8-9, 18, 20 are rejected under 35 U.S.C. 102(a) as being anticipated by Iwasaki (JP-02001267200A).

With respect to claims 1-4, 8-9, 18 and 20, Iwasaki (figs. 3b, 4-8) discloses a mounting system for a pellicle and comprising all basic structures of the instant claims such as: a mounting structure (PF) for coupling a pellicle (PE) to a mask (M), wherein a seal interior portion is formed between the pellicle, the mask and the mounting structure (see figs.4-8) and a port (h1-h4) on the mounting structure through which a pressure difference can be created between the interior region and an exterior region. Iwasaki further teaches a pressure regulator (for example 83a,84b) in connection with the port to adjust the pressure in the interior region and a source of high pressure gas and a source of low pressure gas (83,84) coupled to the pressure regulator, as well as pressure sensor and controller (see fig.4) for adjusting the pressure inside the interior region to a predetermined pressure.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (JP-02001267200A) in view of Sakai et al (U.S.Pat. 4,737,824).

With regard to claims 6, 10, Iwasaki teaches a mounting system comprising substantially all of the limitations of the instant claims except for a position sensor being used to determine the position of the pellicle. Sakai (fig.1 and 2) discloses a surface shape controlling system used in an exposure apparatus for transferring an image formed on a mask onto a substrate. The surface shape controlling system for correcting the deformation of a wafer having: a position sensor/flatness measuring device (10) (in the forms of laser interferometers or capacitive sensor , or air-micro sensor) for detecting plural positions of the substrate to detect the flatness or non-flatness of the substrate (see col.3, lines 40-59); a pressure air chamber (2b) for correcting the deformation of the wafer; wherein the output signal of the position sensor is inputted to a computing circuit device (12) which calculates the deformation of the surface of the wafer and a control device (7-9,11) for controlling the pressure in the air chamber in accordance with the output of the computing circuit device thereby correcting the deformation of the wafer (see col.4, line10-19). Since the wafer and the mask pellicle have a similar problem of deformation occurring during the exposure, the solving solution for the wafer would be the same for the mask pellicle. It would have been obvious to a skilled artisan to utilize the device for preventing the deformation of a wafer as taught by Sakai into the device of Iwasaki for the purpose of preventing the deformation of a mask pellicle and thus improving the quality of the images to be transferred.

Art Unit: 2851

7. Claims 11, 12-15, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (JP-02001267200A) in view of Sakai et al (U.S.Pat. 4,737,824) and further in view of Eynon (U.S.Pat. 6,524,754).

With respect to claims 11, 12-15, 17 and 19, Iwasakaki as modified by Sakai discloses substantially all basic features of the instant claims as discussed except for “an aerodynamic fairing adjacent to the mask”. However, placing “an aerodynamic fairing”/or an air deflector adjacent to a moving device for the purpose of reducing aerodynamic drag on the moving device is well known per se. Eynon teaches a mounting system for a pellicle having “an aerodynamic fairing” adjacent the mounting structures (see fig.1). It would have been obvious to a skilled artisan to combine the teachings of Iwasaki, Sakai and Eynon to obtain the invention as specified in claims 11, 12-15, 17 and 19. It would have been obvious to one having ordinary skill in the art at the time the invention was made to juxtapose the “aerodynamic fairing” as taught by Eynon, to the mask of Iwasaki as modified by Sakai for the purpose of reducing the deformation of the pellicle due to the air turbulence exerting to the pellicle when the mask is moving.

Allowable Subject Matter

8. Claims 7 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record either alone or in combination, neither discloses nor makes obvious a pellicle mounting system comprising a velocity sensor which is in connection with a pressure regulator

Art Unit: 2851

to determine the velocity of the pellicle and to maintain a flat surface on the pellicle based on the reading of from the velocity of the sensor, as recited in the instant claims.

Prior Art Made of Record

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Isohata (JP361094324A) discloses apparatus for correcting surface shape of laminar plate having means for deforming the laminar plate by means of a difference between air pressures.


Sego (U.S.Pat. 5,422,704); and Chiba et al (U.S.Pat. 6,337,161) discloses a mounting system for a mask, each of which comprises substantially all of the structures as recited in the claims of the instant invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-

6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.


HENRY HUNG NGUYEN
PRIMARY EXAMINER

hvn
April 14, 2003